FIREMAN-WATERTENDER, GRADE ~~10~~ 8

Point value		Point value	
Experience and training	160	Physical demand	140
Responsibility	170	Working conditions	180
Mental application	60	Total	710

1. Work performed.—Under the general supervision of the engineer on watch, firemen-watertenders perform work involved in the operation and mainenance of boiler room machinery. The performance of the following duties is typical of this level:

a. Firing one or more high-pressure steam boilers. Lighting, regulating, and extinguishing fires. Visually checking flame on burner head and checking draft gages for efficiency of combustion. Checking water and pressure gages and making any adjustments necessary to maintain safe operating conditions, such as maintaining safe water levels in boilers and adding water. Regulating supply of fuel and combustion air and maintaining proper temperatures.

b. Checking auxiliary equipment, such as fuel and feedwater heaters, boiler water and fuel pumps, automatic combustion controls, and draft fans to see that they are functioning properly. Notifying engineer if equipment is not functioning properly. Assisting engineer with repairs to boilers and equipment.

c. Lubricating moving parts of machinery in boiler room.

d. Periodically blowing down the boiler and blowing the soot from tubes and fire sides. Cleaning fuel strainer and burners, packing pumps, and valves. Assisting in cleaning boilers.

e. Adding compounds to water to prevent formation of scale.

f. Keeping the boiler room clean. Painting boiler room and machinery.

g. Operating pump in boiler room to keep bilges free of water.

2. Factor evaluation.—a. Experience and training—point value 160.

(1) *Experience.*—In addition to the experience required to obtain a certificate as qualified member of the engine department issued by the Coast Guard, a minimum of 6 months' experience as marine fireman on high-pressure steam boilers is required. This experience should have given the fireman-watertender a good working knowledge of boiler operations on oil or coal burning systems, including pumps, heaters, injectors, or other methods of water feeding, also on burners and other auxiliary equipment connected with fuel systems; maintenance of safe water level in boilers; piping and connections used in fuel and water feed systems; hazards incurred as a result of low water, also those because of accumulation of oil in furnaces, bilges, on fireroom floors, and tank tops; and the use of engine and fireroom firefighting equipment.

(2) *Education.*—The ability to read, write, speak, and understand the English language in order to understand and discuss instructions, read fuel, pressure, and temperature gages, and keep boiler room records, is required.

(3) *Training.*—Training is given in the operation and maintenance of burners, pumps, and fuel heaters; manipulation of valves, drafts, etc., in order to supply uniform steam pressure against varying loads, regulate fuel, combustion, and heat, and maintain proper water levels; safety regulations; and good housekeeping requirements.

b. Responsibility—point value 170.

(1) *Supervision received.*—Firemen-watertenders work under the general supervision of the engineer who checks their work at intervals to determine if boilers are being operated efficiently and within prescribed limits.

(2) *Supervision exercised.*—None.

(3) *Continuity of operations.*—Firemen-watertenders are responsible for the sustained operation of a vital utility and must constantly check boiler gages and fire to prevent dangerous losses in pressures, drops in water levels, and other interruptions of the utility which would delay or prevent the operation of the plant. Workers must also check the auxiliary equipment in the boiler room periodically.

(4) *Safety.*—Workers are required to observe safety regulations pertaining to the operation of boilers, concentrating on keeping water at prescribed levels to prevent explosions and damage to personnel and equipment.

c. Mental application—point value 60.—Mental alertness is required at all times in watching gages to note drops or overloads in pressure and water level and promptly determining method of correcting same, in watching fires and adjusting equipment.

d. Physical demand—point value 140.—While tending boilers, workers are required to stand most of the time and to exert light to moderate physical effort while turning valves and moving levers. During periodic boiler cleaning operations, workers climb ladders and work in stooped or prone positions. Considerable physical exertion is required to handle compressed air boiler tube cleaning equipment; however, such duties are usually performed at intervals of 2 to 3 weeks or longer.

e. Working conditions—point value 180.—Workers are subject to abnormal heat and to hazards of boiler bursts, fire and steam blow-backs, toxic amounts of gas and smoke, scalding water, and burns from contact with boilers. There is danger of drowning in case of accident.

460 470A

U. S. GOVERNMENT PRINTING OFFICE: 1949